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(71) Applicant: NISSAN MOTOR CO LTD

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(72) Inventor: KOSEKI TAKANAO

(54) INTERNAL EGR AMOUNT ESTIMATING
DEVICE OF INTERNAL COMBUSTION ENGINE

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(57) Abstract:

PROBLEM TO BE SOLVED: To precisely estimate an internal EGR amount from the quantity of state in the cylinder of the engine by using a physical equation.

SOLUTION: When an exhaust valve is closed, based on signals from an exhaust temperature sensor 12, an intake pressure sensor 10, and exhaust pressure sensor 11, a cylinder temperature and a cylinder pressure are calculated, the gas constant of exhaust gas according to a combustion air/fuel ratio is calculated, and a cylinder gas amount is calculated. Then, based on signals from a crank angle sensor 14, a water temperature sensor 15, cam angle sensors 16 and 17, and an accelerator opening sensor 18, a blowback gas amount during overlapping in an intake valve opening period and an exhaust valve opening period is calculated. Based on the calculated values of the cylinder gas amount and the blowback gas amount, the internal EGR amount is calculated.

